6KD6

Beam Power Tube

Duodecar Type

For Low B+ Horizontal-Deflection-Amplifier Circuits of Color-TV Receivers

ELECTRICAL CHARACTERISTICS – Bogey Values

Heater Voltage, ac or dc	E_h			6.3		V
Heater Current	I_h			2.85		A
Direct Interelectrode Capacitances (approx.):[a]						
Grid No.1 to plate	c_{g1-p}			0.8		pF
Input: G1 to (K,G3,G2,H)	c_i			40		pF
Output: P to (K,G3,G2,H)	c_o			16		pF

For the following characteristics, see Conditions below:

Amplification Factor (Triode Connection)[b]	μ	–	–	–	4[c]	
Plate Resistance (approx.)	r_p	–	–	–	6000	Ω
Transconductance	g_m	–	–	–	14000	µmho
DC Plate Current	I_b	–	1100[d]	780[d]	100	mA
DC Grid-No.2 Current	I_{c2}	–	110[d]	44[d]	2	mA
Cutoff DC Grid-No.1 Voltage for I_b = 1 mA	$E_{c1(co)}$	-125	–	–	-40	V
Conditions:						
Heater Voltage	E_h	←		6.3	→	V
Peak Positive-Pulse Plate Voltage[e]	e_{bm}	5000	–	–	–	V
DC Plate Voltage	E_b	–	45	60	150	V
DC Grid-No.3 Voltage		Connected to cathode at socket				
DC Grid-No.2 Voltage	E_{c2}	110	160	110	110	V
DC Grid-No.1 Voltage	E_{c1}	–	0	0	-22.5	V

MECHANICAL CHARACTERISTICS

Maximum Overall Length . . . . 4.625 in (117.47 mm)
Maximum Seated Length . . . . 4.250 in (107.95 mm)
Maximum Diameter . . . . 1.563 in (39.7 mm)
Dimensional Outline . . . . JEDEC 12-118
Envelope . . . . JEDEC T12
Top Cap[f] . . . . Small (JEDEC C1-1)
Base . . . . . . Large-Button Duodecar 12-Pin (JEDEC E12-74)

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Terminal Diagram . . . . JEDEC 12GW

Type of Cathode . . . . Coated Unipotential

Operating Position . . . . Any

MAXIMUM RATINGS – Design-Maximum Values[g]

For operation as a Horizontal-Deflection-Amplifier Tube in a 525-line, 30-frame system

DC Plate Supply Voltage	E_{bb}	990	V
Peak Positive-Pulse Plate Voltage[h]	e_{bm}	7000[k]	V
DC Grid-No.3 Voltage[m]	E_{c3}	20	V
DC Grid-No.2 (Screen-Grid) Voltage	E_{c2}	200	V
Peak Negative-Pulse Grid-No.1 (Control-Grid) Voltage	$-e_{c1m}$	250	V
Heater-Cathode Voltage:			
Peak	e_{hkm}	±200	V
Average[n]	E_{hk}	100	V
Heater Voltage, ac or dc	E_h	5.7 to 6.9	V
Cathode Current:			
Peak	i_{km}	1400	mA
Average[n]	$I_{k(av)}$	400	mA
Grid-No.2 Input	P_{g2}	5.0	W
Plate Dissipation[p]	P_b	33	W
Envelope Temperature	T_E	225[q]	°C

MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance	R_{g1}	2.2	MΩ
Grid-No.3-Circuit Resistance	R_{g3}	0.01	MΩ

[a] Measured without external shield in accordance with the current issue of EIA Standard RS-191.

[b] With grid No.3 and grid No.2 connected, respectively, to cathode and plate at socket.

[c] Conditions: $E_b = E_{c2} = 150$ V, $E_{c1} = -22.5$ V.

[d] This value can be measured by a method involving a recurrent waveform such that the Maximum Ratings of the tube will not be exceeded.

[e] Under pulse-duration condition specified in Footnote h.

[f] Designed to mate with connector of 0.250-inch cap, generally available from your local RCA distributor.

[g] As defined in the current issue of EIA Standard RS-239, unless otherwise specified.

[h] This rating is applicable when the duration of the voltage pulse does not exceed 15% of one horizontal scanning cycle. In a 525-line, 30-frame system, 15% of one horizontal scanning cycle is 10 μs.

[k] Absolute-Maximum Value.

[m] In horizontal-deflection-amplifier service, a positive voltage may be applied to grid No.3 to reduce interference from "snivets," which may occur in both vhf and uhf television receivers. A typical value for this voltage is 20 volts.

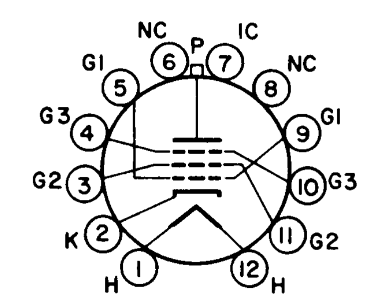
[n] Measured with a DC meter.

[p] An adequate bias resistor or other means is required to protect the tube in the absence of excitation.

[q] This rating is applicable when measurement is made using a thermocouple attached to a 0.1-inch wide phosphor-bronze ring placed at the hottest location on the envelope. A maximum rating of 240°C is applicable to direct thermocouple measurements taken at the hottest point on the envelope surface.

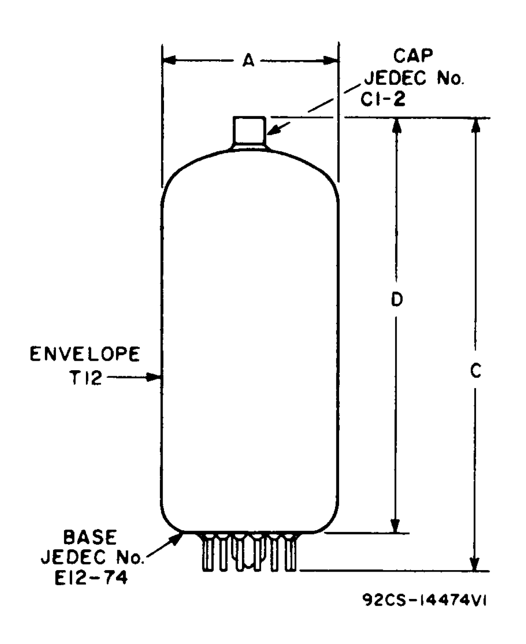
TERMINAL DIAGRAM (Bottom View)

Pin 1 – Heater
Pin 2 – Cathode
Pin 3 – Grid No.2
Pin 4 – Grid No.3
Pin 5 – Grid No.1
Pin 6 – No Connection
Pin 7 – Do Not Use
Pin 8 – No Connection
Pin 9 – Grid No.1
Pin 10 – Grid No.3
Pin 11 – Grid No.2
Pin 12 – Heater
Cap – Plate



JEDEC 12GW

DIMENSIONAL OUTLINE (JEDEC No.12-118)



DIMENSION	INCHES		MILLIMETERS	
	Min.	Max.	Min.	Max.
A	1.437*	1.563	36.5*	39.7
C	–	4.625	–	117.47
D	–	4.250	–	107.95
MILLIMETER DIMENSION DERIVED FROM INCH DIMENSION				
* Applies to the minimum diameter except in the area of the seal.				